

3.3 TRANSPORTATION

INTRODUCTION

This section describes the current transportation system in the SCAG region, discusses the potential impacts of the RTP on the transportation environment, identifies mitigation measures for the impacts, and evaluates the residual impacts.

ENVIRONMENTAL SETTING

The Southern California transportation system is a complex intermodal network designed to carry both people and goods. It consists of roads and highways, public transit (paratransit, bus and rail), freight railroads, airports, marine ports and intermodal terminals. The regional roadway system consists of an interconnected network of local streets, arterial streets, freeways, carpool lanes and toll roads. This roadway network allows for the operation of private autos, carpools, motorcycles, private and public buses, and trucks. Non-motorized transportation modes, such as bicycles share many of these facilities. The regional public transit system includes local shuttles, municipal and area-wide public bus operations, rail rapid transit operations, regional commuter rail services, and inter-regional passenger rail service. The freight railroad network includes an extensive system of private railroads and several publicly owned freight rail lines serving industrial cargo and goods. The airport system consists of commercial, general, and military aviation facilities serving passenger, freight, business, recreational, and defense needs. The region's marine ports support substantial international and interregional freight movement and tourist travel. Intermodal terminals consisting of freight processing facilities serve the function of transfer, storage and distribution of goods. The transportation system supports the region's economic needs as well as the demand for personal travel.

The regional transportation system is currently operating at capacity during peak periods. The roadway system shows substantial freeway congestion in the morning and evening peak period, with random episodes of incident-related (i.e. accident) congestion throughout the day. The transit system is experiencing substantial overcrowding on a number of core urban bus routes with significant excess capacity on most off-peak and peripheral routes. Rail transit is very close to capacity during peak hours on the Metro Blue Line, Metro Red Line, and Metro Gold Line, while the Metro Green Line generally has capacity available at all times. Commuter rail service is at or near capacity during peak periods as the routes approach Union Station in downtown Los Angeles, but suburb-to-suburb capacity is available on most lines.

Transportation Planning in the SCAG Region

Numerous agencies are responsible for transportation planning and investment decisions within the SCAG region. SCAG helps integrate the transportation-planning activities in the region to ensure a balanced, multi-modal plan that meets regional as well as county, subregional, and local goals.

Table 3.3-1 identifies local, state and federal governmental agencies that participate in the development of the Regional Transportation Plan. Seven major entities and agencies are involved



Table 3.3-1: Parties Directly Involved in the Development of the Regional Transportation Plan	
County Transportation Commissions / Transportation Sales Tax Commission	
Imperial	
Los Angeles	
Orange	
Riverside	
San Bernardino	
Ventura	
Subregions/ Councils of Governments	
Arroyo Verdugo Cities	
Coachella Valley Association of Governments	
Gateway Cities COG	
Imperial Valley Association of Governments	
Las Virgenes-Malibu-Conejo COG	
City of Los Angeles	
North Los Angeles	
Orange County COG	
San Bernardino County Associated Governments	
San Gabriel Valley Association of Governments	
South Bay Cities COG	
Ventura County Council of Governments	
Western Riverside County COG	
Westside Cities COG	
Local and County Governments	
Other Owners, Operators and Implementing Agencies	
Caltrans District Offices	
Airport Authorities	
Port Authorities	
Transit / Rail Operators	
Resource / Regulating Agencies	
US Department of Transportation (Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, Federal Railroad Administration)	
US Environmental Protection Agency	
California Department of Transportation	
California Air Resources Board	
California Environmental Protection Agency	
Air Districts	
Other private, Non-profit organizations, interest groups and Tribal Nations	
Source: SCAG. (2003). <i>Draft 2004 Regional Transportation Plan</i> . Los Angeles, CA.	

including SCAG as the designated Metropolitan Planning Organization (MPO), the County Transportation Commissions (CTCs), Sub-regional Councils of Governments (COGs), local and county governments, transit and transportation owners, operators and implementing agencies, Resource / Regulating agencies and other private non-profit organizations, interest groups and tribal nations.



Each of the six counties in the SCAG region has a Transportation Commission or Authority with the exception of Imperial County, where the Imperial Valley Association of Governments (IVAG) serves as the regional countywide transportation agency. These agencies are charged with countywide transportation planning activities, allocation of locally generated transportation revenues and, in some cases, operation of transit services. In addition, there are 14 subregions (COGs) within the SCAG region which are groups of cities and communities geographically clustered (sometimes comprising an entire county), which work together to identify, prioritize, and seek transportation funding for needed investments in their respective areas.

Congestion Management System (CMS)

In order to meet federal certification requirements, SCAG and the county Congestion Management Agencies (CMAs) have worked together to develop a Congestion Management System (CMS) process for the region. In the SCAG region, the CMS is comprised of the combined activities of the RTP, the state Congestion Management Program (CMP) and the Regional Transportation Improvement Program (RTIP).

Under state law, CMPs are prepared and maintained by the CMAs. The Los Angeles County Metropolitan Transportation Authority (LACMTA), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), and Ventura County Transportation Commission (VCTC) are the designated CMAs of each county and are subject to state requirements. While Imperial County is not subject to state CMP requirements, CMS-related activities there are accomplished through the development of the RTP and the RTIP by the Imperial Valley Associated Governments (IVAG).

Congestion Management Program (CMP)

In addition to SCAG's RTP and RTIP, the key elements of the federal Congestion Management System (CMS) are addressed through the CMP. Because the magnitude of congestion and degree of urbanization differ among the counties, each CMP differs in form and local procedure. By state law, all CMPs perform the monitoring and management functions shown below which also fulfill the federal CMP requirements.

- a) Highway Performance – Each CMA monitors the performance of an identified highway system. This monitoring allows each county to track how this system, and its individual components, are performing against established standards, and how performance changes over time.
- b) Multi-Modal Performance – In addition to highway performance, each CMP contains an element to evaluate the performance of other transportation modes including transit.
- c) Transportation Demand Management (TDM) – Each CMP contains a TDM component geared at reducing travel demand and promoting alternative transportation methods.
- d) Land Use Programs and Analysis – Each CMP incorporates a program for analyzing the effects of local land use decisions on the regional transportation system.



- e) Capital Improvement Program (CIP) – Using data and performance measures developed through the activities identified above, each CMP develops a CIP. This becomes the first step in developing the County Transportation Improvement Program (TIP). Under state law, projects funded through the RTIP must first be contained in the county CIP.
- f) Deficiency Planning – The CMP contains provisions for “deficiency plans” to address unacceptable levels of congestion. Deficiency plans can be developed for specific problem areas or on a system-wide basis. Projects implemented through the deficiency plans must, by statute, have both mobility and air quality benefits. In many cases, the deficiency plans capture the benefits of transportation improvements that occur outside the county TIPs and RTIP such as non-traditional strategies and/or non-regionally significant projects.

The regional transportation planning process and the county congestion management process should be compatible with one another. To ensure consistency, SCAG and the CMAs have developed the Regional Consistency and Compatibility Criteria for CMPs. Information on the CMP activities and resulting data is updated on a biennial basis by each CMA and supplied to SCAG and the respective air quality management district.

Commute Patterns and Travel Characteristics

The existing transportation network serving the SCAG region supports the movement of people and goods. On a typical day in the region, the transportation network serving the 5-county area (excluding Imperial County) supports a total of approximately 368.5 million vehicle miles of travel (VMT) and 10.0 million vehicle hours of travel (VHT). Of this total, over half occur in Los Angeles County and slightly less than one-fifth occur in Orange County. A detailed summary of existing VMT and VHT for the region and five counties is presented in Table 3.3-2. Table 3.3-11 provides general VMT information for all six counties collectively.

Much of the existing travel in the SCAG region takes place during periods of congestion, particularly during the morning and evening peak periods (defined as 6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM, respectively). Congestion can be quantified as the amount of travel that takes place in delay (vehicle hours of delay or VHD) and, alternately, as the percentage of all travel time that occurs in delay (defined as the travel time spent on the highway due to congestion, which is the difference between VHT at free-flow speeds and VHT at congested speeds). Table 3.3-3 presents the existing (2000) travel delays and percent of regional VHT in delay by County on freeways and arterials. As shown in Table 3.3-3, regional travel time in delay represents approximately 10% of all daily, 13% of all AM peak period, and 16% of all PM peak period travel times.

Figure 3.3-1 in the Figure Chapter at the end of this document shows PM peak period congestion delay on the regional freeway system. Major portions of the system are extremely congested during the PM peak period, particularly in Los Angeles and Orange Counties and the areas immediately to the east and west. A substantial portion of PM peak period travel in each county takes place in delay, ranging from a low of 8% in Imperial County to a high of 26% in Los Angeles County.

Of the current total daily trips in the SCAG region, approximately 16.2% are home-to-work trips (a.m. trips). Unlike personal trips, commute trips are generally non-discretionary; i.e., they must be made



Table 3.3-2: Summary of Existing (2000) Daily Vehicle Miles & Percent Vehicle Hours of Travel

County	Vehicle Miles of Travel (VMT)						Vehicle Hours of Travel (VHT)					
	AM Peak Period		PM Peak Period		Daily		AM Peak Period		PM Peak Period		Daily	
	Miles	% of Region	Miles	% of Region	Miles	% of Region	Hours	% of Region	Hours	% of Region	Hours	% of Region
Imperial*	1,444,000	2%	1,974,000	2%	7,049,000	2%	35,000	2%	51,000	1%	172,000	2%
Los Angeles	40,419,000	54%	63,074,000	54%	197,196,000	54%	1,289,000	58%	2,132,000	58%	5,829,000	58%
Orange	13,935,000	19%	21,687,000	19%	67,822,000	18%	404,000	18%	670,000	18%	1,876,000	19%
Riverside	8,176,000	11%	13,054,000	11%	41,077,000	11%	214,000	10%	351,000	10%	1,018,000	10%
San Bernardino	7,816,000	10%	12,574,000	11%	39,245,000	11%	201,000	9%	330,000	9%	968,000	10%
Ventura	3,201,000	4%	5,257,000	5%	16,125,000	4%	84,000	4%	143,000	4%	412,000	4%
Total of 5 Counties*	74,991,000	100%	117,620,000	100%	368,514,000	100%	2,227,000	100%	3,677,000	100%	10,275,000	100%

Source: Regional Travel Demand Model, 2003. SCAG. Los Angeles, CA.

Table 3.3-3: Summary of Delay and Work Trip Length, 2000

County	Vehicle Hours of Delay			% of Travel in Delay			Average Home-to-Work Trip Distance (miles)	Average Home-to-Work Trip Duration (minutes)
	AM Peak Period	PM Peak Period	Daily	AM Peak Period	PM Peak Period	Daily	Vehicle Trips (AM Only)	Vehicle Trips (AM Only)
Imperial*	1,000	4,000	7,000	3%	8%	4%	*	*
Los Angeles	292,000	562,000	1,061,000	23%	26%	18%	11.3	21.4
Orange	69,000	141,000	260,000	17%	21%	14%	11.6	20.5
Riverside	32,000	59,000	111,000	15%	17%	11%	18.3	29.5
San Bernardino	21,000	41,000	76,000	10%	12%	8%	16.4	26.5
Ventura	8,000	19,000	33,000	10%	13%	8%	13.3	21.7
Average of Counties	70,500	137,667	258,000	13%	16%	10%	14.2	23.9

* Trip distance and duration data is not available for Imperial County

Source: SCAG. (2003). Regional Travel Demand Model. Los Angeles, CA.

at a specific time and to a specific location. The current average home-to-work trip in the region is 14.2 miles long. A summary of home-to-work trip characteristics by county is also presented in Table 3.3-3.

The average vehicle home-to-work trip duration in each county is generally similar while a greater range of average work distances is found in the different counties of the region (from a low of 11.3 miles in Los Angeles County to a high of 18.3 miles in Riverside County). Home-to-work trip duration and distance are both greater for the inland counties of Riverside and San Bernardino, reflecting regional housing and employment distribution patterns.

Based on average accident rates provided by Caltrans, transportation-related fatalities occur at an overall rate of 0.011 per million passenger miles traveled, taking into account the varying accident rates on different facility types (freeway, arterials) and travel modes (bus transit, rail transit). These specific accident rates and the resulting estimate of region-wide accident rates are detailed in Table 3.3-4.

Public transit service in all its forms (including school buses) carry approximately 3.5% of all trips in the SCAG region. Of these, the greatest number are carried by buses, with lesser patronage on Metro Rail, paratransit, commuter rail and other forms of public transit services. Work trips made via public transit account for 4.8% of all home-to-work trips in the region, as detailed in Table 3.3-5.

Regional Freeway, Highway, and Arterial System

Regional Freeway and Highway System

The regional freeway and highway system shown in Figure 3.3-2 in the Figure Chapter at the end of this document is the primary means of person and freight movement for the region. This system provides for direct auto, bus and truck access to employment, services and goods. The network of freeways and state highways serves as the backbone of the system offering very high capacity limited-access travel and serving as the primary heavy-duty truck route system. The components of the regional freeway system are included in Table 3.3-6. These freeways are a sub-set of the state highway system.

Regional HOV System and Park & Ride System

The regional HOV system consists of exclusive lanes on freeways and arterials, as well as busways and exclusive rights-of-way dedicated to the use of high-occupant vehicles. It includes lanes on freeways, ramps and freeway-to-freeway connectors. The regional HOV system is designed to maximize the person-carrying capacity of the freeway system through the encouragement of shared-ride travel modes. HOV lanes operate at a minimum occupancy threshold of either 2 or 3 persons. Many include on-line and off-line park & ride facilities, and several HOV lanes are full “transitways” including on-line and off-line stations for buses to board passengers. The current system is described in Table 3.3-7.

Table 3.3-4: Total Vehicle Fatalities, 2001

<i>County</i>	<i>Fatalities</i>	<i>Fatalities per 100 million Vehicle Miles Traveled</i>	<i>Vehicle Miles Traveled (100 millions)</i>
Highways			
Imperial	28	2.5	11.1
Los Angeles	189	0.5	383.0
Orange	74	0.6	132.7
Riverside	114	1.3	89.0
San Bernardino	148	1.4	108.1
Ventura	28	0.8	36.0
Total SCAG Region	581	0.8	759.9
<i>County</i>	<i>Fatalities</i>	<i>Fatalities per 100 million Passenger Miles Traveled</i>	<i>Passenger Miles Traveled (100 millions)</i>
Transit			
Imperial	0	-	-
Los Angeles	11	0.5	21.0
Orange	0	-	2.3
Riverside	2	2.9	0.7
San Bernardino	0	-	0.9
Ventura	0	-	0.2
Metrolink	7	2.5	2.8
Total SCAG Region	20	0.7	28.4
Sources:			
1. California Department of Transportation, Division of Traffic Operations. (2001). Collision Data on California State Highways.			
2. Federal Transit Administration. (2002). National Transit Database, 2001. Accessed from www.ntdprogram.com in April 2003.			

Park and ride facilities are generally located at the urban fringe along heavily-traveled freeway and transit corridors and support shared-ride trips, either by transit, by carpool or vanpool. Most rail transit stations have park and ride lots nearby. There are currently 219 park and ride lots in the SCAG region, including Metrolink station parking lots. These facilities include: 34 park and ride facilities in Orange County, 124 in Los Angeles County, 21 in Riverside County, 18 in San Bernardino County and 22 in Ventura County.¹

¹ Southern California Association of Governments. 2002. *Park and ride inventory*. Los Angeles, CA.

Table 3.3-5: Existing (2000) Travel Mode Split (% of County Total)						
County	Person Trip Type	Drive Alone	Carpool	Transit**	Non-Motorized	Total
Imperial*	Home-Work/Univ All Daily Trips					
Los Angeles	Home-Work/Univ All Daily Trips	74.8 46.7	13.9 40.0	6.5 4.2	4.8 9.2	100 100
Orange	Home-Work/Univ All Daily Trips	79.5 51.1	13.6 39.6	3.0 2.2	3.9 7.2	100 100
Riverside	Home-Work/Univ All Daily Trips	78.4 48.1	16.3 41.8	1.9 3.2	3.4 6.9	100 100
San Bernardino	Home-Work/Univ All Daily Trips	78.3 47.7	15.8 42.0	2.7 3.3	3.4 7.1	100 100
Ventura	Home-Work/Univ All Daily Trips	80.6 51.1	13.4 39.1	1.1 1.7	4.9 8.1	100 100
Total of 5 Counties*	Home-Work/Univ All Daily Trips	76.7 48.0	14.2 40.2	4.8 3.5	4.4 8.3	100 100

*Imperial County data is not available from the SCAG Regional Travel Demand Model.

** Includes school trips by school bus

Source: SCAG. (2003). *Regional Travel Demand Model*. Los Angeles, CA

Table 3.3-6: Existing (2000) Regional Freeway Route Miles and Lane Miles by County

<i>County</i>	<i>Freeway Route Miles</i>	<i>Freeway Lane Miles</i>
Imperial	89	358
Los Angeles	531	4,265
Orange	202	1,435
Riverside	221	1,320
San Bernardino	189	1,135
Ventura	93	514
SCAG total	1,325	9,027
Source: SCAG. (2003). Regional Travel Demand Model. Los Angeles, CA.		

Table 3.3-7: Existing (2000) Regional High Occupancy Vehicle (HOV) Route Miles and Lane Miles by County

<i>County</i>	<i>HOV Centerline Miles</i>	<i>HOV Total Lane Miles</i>
Imperial	0	0
Los Angeles	180	370
Orange	98	202
Riverside	18	38
San Bernardino	26	52
Ventura	1	2
SCAG total	323	664
Source: SCAG. (2003). Regional Travel Demand Model. Los Angeles, CA.		

Arterial Street System

The local street system provides access for local businesses and residents. The arterial network provides high levels of signalized street capacity and serves as a feeder system for the regional freeways. These streets also provide an integral part of the regional transportation system, particularly for shorter trips, acting as alternative routes to freeway driving and accounting for approximately 50% of overall daily VMT². Peak period congestion on the arterial street system occurs generally in the vicinity of activity centers, at bottleneck intersections and near many freeway interchanges. The region's arterial street system is described in Table 3.3-8.

² Southern California Association of Governments. 2003. *Draft regional transportation plan*. Los Angeles, CA.

Table 3.3-8: Existing (2000) Regional Arterial Route Miles and Lane Miles by County			
<i>County</i>		<i>Route Miles</i>	<i>Lane Miles</i>
Imperial	Principal Arterials	103	462
	Minor Arterials	12	38
Los Angeles	Principal Arterials	2,096	8,390
	Minor Arterials	2,614	8,498
Orange	Principal Arterials	632	3,235
	Minor Arterials	784	2,943
Riverside	Principal Arterials	308	1,225
	Minor Arterials	887	2,754
San Bernardino	Principal Arterials	529	1,797
	Minor Arterials	1,250	3,556
Ventura	Principal Arterials	253	927
	Minor Arterials	327	953
SCAG total	Principal Arterials	3,921	16,036
	Minor Arterials	5,874	18,742

Source: SCAG. (2003). Regional Travel Demand Model. Los Angeles, CA.

Public Transit

In Southern California public transit service is comprised of local and express buses, Rapid Bus, urban rail, including subway and light rail principally centered in the core of Los Angeles County, commuter rail that spans five counties and shuttles/circulators that feed all transportation modes and activity centers. Transit service is provided by approximately 30 separate public agencies. Ten of these agencies provide 93 percent of the existing public bus transit service. Local service is supplemented by municipal lines and shuttle services. Private bus companies provide additional regional service.

Metro Rail transit ridership has been steadily increasing as new routes have been added. Commuter rail service has continued to grow steadily since its introduction in 1992, both in service and patronage. A summary of the current service and patronage for the largest transit operators in each county is presented in Table 3.3-9. Many people depend on reliable transit service to participate in the economic, cultural and social benefits of Southern California. Transit ridership has increased in absolute numbers, from a recent low in 1995 to a high in 2001 (approximately 630 million annual boardings).³ The recent upward trend can be partially credited to new urban rail system service expansions and the introduction and expansion of Metrolink, the region's commuter rail service.

The largest provider of public transit service in Los Angeles County is the Los Angeles County Metropolitan Transportation Authority (LACMTA). LACMTA operates a comprehensive network of fixed-route bus routes and an urban rail system (Metro Rail). Among the fixed-route bus services operated by the LACMTA is Metro Rapid Bus, which consists of a simple route layout, frequent

³ National Transit Database. 1985-2001. Accessed from www.ntdprogram.com in April, 2003.



Table 3.3-9: Key Statistics for Major Transit Operators (2001)					
<i>County</i>	<i>Largest Transit Operator</i>	<i>Average Weekday Boardings</i>	<i>Annual Boardings</i>	<i>Annual Vehicle Revenue Miles (VRM)</i>	<i>Passenger Fares as a % of Operation Expenses*</i>
Fixed Route Bus Service					
<i>Los Angeles</i>	LACMTA	1,155,766	336,308,899	80,281,617	21%*
<i>Orange</i>	OCTA	180,741	57,328,328	20,158,092	34%*
<i>San Bernardino</i>	Omnitrans	51,112	15,468,055	7,575,786	21%*
<i>Riverside</i>	RTA	21,769	6,601,976	5,450,941	19%*
<i>Ventura</i>	SCAT	12,049	3,669,452	1,422,774	23%*
Metro Rail - Subway					
<i>Los Angeles</i>	LACMTA	105,571	31,191,466	5,539,831	21%*
Metro Rail - Light Rail					
<i>Los Angeles</i>	LACMTA	105,613	30,610,139	4,366,779	21%*
Regional Commuter Rail					
<i>Various</i>	SCRRA (Metrolink)	28,080	7,397,965	6,776,085	48%
* For all transit modes. Fare data is not segregated by mode.					
Source: Federal Transit Administration. (2002). <i>The National Transit Database for 2001</i> . Accessed from www.ntdprogram.com in April 2003.					

service, less frequent stops, low-level buses for fast boarding and exiting, color-coded buses and stop, and bus priority at intersections. Metro Rapid Bus routes are currently (as of mid-2003) in operation on Wilshire/Whittier Boulevards, Ventura Boulevard, Vermont Avenue, and South Broadway.

The largest provider of public transit service in Orange County is the Orange County Transportation Authority (OCTA), which operates more than 400 buses on over 70 local and express routes throughout the urbanized portions of Orange County. In 2001, the system experienced approximately 180,000 average weekday boardings, and 34% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in Riverside County is the Riverside Transit Agency (RTA), which is the primary provider of fixed-route and paratransit services throughout a 2,500 square mile service area in the western portion of the county. It operates buses on approximately 40 local and express routes. In 2001, the system experienced approximately 23,000 average weekday boardings (including bus and paratransit boardings), and 19% of the system's operating expenses were recovered through passenger fares.

The largest provider of public transit service in San Bernardino County is Omnitrans, which provides bus and paratransit services in a 480 square mile area in the San Bernardino Valley in the western portion of the county. It operates a fleet of more than 218 buses over approximately 35 routes. In 2001, the system experienced approximately 53,000 average weekday boardings, and 21% of the system's operating expenses were recovered through passenger fares.



The largest provider of public transit service in Ventura County is South Coast Area Transit (SCAT), which provides bus and paratransit services in the western portion of the county with the cities of Ojai, Oxnard, Port Hueneme, San Buenaventura and the unincorporated areas. It operates a fleet of more than 40 buses over approximately 16 routes. In 2001, the system experienced approximately 12,000 average weekday boardings, and 23% of the system's operating expenses were recovered through passenger fares.

Fixed-Route Bus Services

Fixed-route bus services are operated or funded by a number of public agencies from small municipal operators to major county-wide operators. Service levels and frequency of service on routes and corridors varies depending upon demand and available resources. Fixed-route bus operators carried approximately 550,000,000 unlinked trips in 1998.

Metro Rail System

Existing urban rail lines (Metro Rail) are located in Los Angeles County and are operated by LACMTA. They include the Metro Blue Line from Long Beach to Downtown Los Angeles, the Metro Green Line from El Segundo to Norwalk, the Metro Red Line subway, which terminates in North Hollywood with a spur to Western Avenue (shown in Figure 3.3-3 in the Figure Chapter at the end of this document), and the Metro Gold Line which runs from Union Station to Pasadena.

The Metro Rail system is operated seven days a week. A system total of 17 route miles of subway (Metro Red Line) and 55 route miles of light rail serves a total of 65 stations (as of mid-2003). Ridership on the Metro Rail system exceeded 60,000,000 boardings in 2001.⁴

Regional Commuter Rail

Commuter rail service is operated by the Southern California Regional Rail Authority (SCRRA). In October of 1992, the SCRRA began initial operation of the Metrolink commuter rail system on four lines. Service on the initial system was greatly expanded after the 1994 Northridge earthquake. Currently (2003) SCRRA operates 7 routes including five from downtown Los Angeles to Oxnard, Lancaster, San Bernardino, Riverside, and Oceanside, from San Bernardino to Irvine, and the newest route from Riverside via Fullerton to downtown Los Angeles. As of mid-2003, the system operated 137 trains on weekdays, 24 on Saturdays and 8 on Sundays to 53 stations on 512 route miles. Daily ridership is approximately 34,000 passengers.⁵

⁴ Los Angeles Metropolitan Transportation Authority. 2003. <http://www.mta.net/press/pressroom/facts.htm#Metro%20Rail>, and http://www.mta.net/trans_planning/construction/gold_line.htm. Accessed May 2003.

⁵ Southern California Regional Rail Authority. 2003. http://www.metrolinktrains.com/about/facts_and_timeline.asp. Accessed May 2003.



Amtrak provides significant regional and inter-regional service on the LOSSAN—San Diego to San Luis Obispo corridor (also known as Amtrak's Pacific Surfliner corridor) operating 30 trains (combined weekday and weekend service) from Los Angeles Union Station. Additionally, Amtrak operates three interstate routes within the region (Sunset Limited, Southwest Chief and Texas Eagle) operating an average of 4 trains per day. These regional commuter rail lines are shown in Figure 3.3-3 in the Figure Chapter at the end of this document.

Shuttles and Demand-Responsive Services

One component of the region's public transit system consists of publicly operated or funded demand-response taxis and dial-a-ride services; some open to the general public, others limited to elderly and disabled users. It also includes locally operated or funded shuttle buses (e.g. Los Angeles DASH, Pasadena ARTS, Glendale Beeline, Cerritos on Wheels, El Monte Transit, Riverside Orange Blossom, etc.). Access Paratransit, the largest provider of transportation services for the disabled in the region, operates in the vicinity of fixed-route bus and rail lines in Los Angeles County and extends into portions of the surrounding counties of San Bernardino, Orange and Ventura. These systems serve as local shuttles, internal circulators, connectors to other public transit, or as shoppers' shuttles. Service on these systems is usually limited to a prescribed geographic area.

Goods Movement

Wholesale and retail trade, transportation, and manufacturing support over 40% of the region's employment according to statistics provided by the state's Employment Development Department. Goods movement includes trucking, rail freight, air cargo, marine cargo, and both domestic and international freight, the latter entering the country via the marine ports, airports, and the international border with Mexico. Additionally, many cargo movements are intermodal, e.g. sea to truck, sea to rail, air to truck, or truck to rail. The goods movement system includes not only highways, railroads, sea lanes, and airways, but also intermodal terminals, truck terminals, railyards, warehousing, freight consolidation/de-consolidation terminals, freight forwarding, package express, customs inspection stations, truck stops, and truck queuing areas.

Railroads

The SCAG region is served by two main line commercial freight railroads - the Burlington Northern and Santa Fe Railway Co. (BNSF) and the Union Pacific Railroad (UP). These railroads link Southern California with other U.S. regions, Mexico and Canada either directly or via their connections with other railroads. They also provide freight rail service within California. In 1999, these railroads moved approximately 120 million tons of cargo throughout California.⁶

⁶ Calculated from data provided in: LAEDC. (2002). *LA basin mainline study*. Los Angeles, CA.



The SCAG region is also served by three short line or switching railroads:

- The Pacific Harbor Line (formerly the Harbor Belt Railroad), which handles all rail coordination involving the Ports of Los Angeles and Long Beach, including dispatching and local switching in the harbor area
- Los Angeles Junction Railway Company, owned by BNSF, which provides switching service in the Vernon area for both the BNSF and UP.
- The Ventura County Railroad, owned by Rail America, Inc., which serves the Port of Hueneme and connects with the UP in Oxnard.

These railroads perform specific local functions and serve as feeder lines to the trunk line railroads for moving goods to and from Southern California.

The two main line railroads also maintain and serve major facilities in the SCAG region. Intermodal facilities in Commerce (BNSF-Hobart), East Los Angeles (UP), San Bernardino (BNSF), and Carson near the San Pedro Bay Ports (UP-ICTF), the Los Angeles Transportation Center (UP-LATC), and the UP-City of Industry yards serve on-dock rail capacity at the Ports of Los Angeles (UP/BNSF) and Long Beach (UP/BNSF).

All of the major rail freight corridors in the region have some degree of grade separation, but most still have a substantial number of at-grade crossings on major streets with high volumes of vehicular traffic. These crossings causes both safety and reliability problems for the railroads and for those in motor vehicles at the affected crossings. Trespassing on railroad rights of way by pedestrians is another safety issue affecting both freight and commuter railroads.

Heavy-Duty Trucks

One of the key components of the region's goods movement system is the fleet of heavy-duty trucks, defined as cargo-carrying vehicles with a gross weight rating in excess of 8,500 pounds. Trucks provide a vital link in the distribution of all types of goods between the region's ports (sea and air), railroads, warehouses, factories, farms, construction sites and stores. The size and weight of heavy-duty trucks gives them unique operating characteristics; i.e., they accelerate and decelerate more slowly than lighter vehicles and require more road space to maneuver. Dedicated capacity enhancement facilities currently exist at two major freeway interchanges: the junction of the Golden State Freeway (I-5) with the Foothill Freeway (I-210) and the Antelope Valley Freeway (SR-14) and at the junction of the San Diego Freeway (I-405) with the Harbor Freeway (I-110). In addition, truck climbing lanes are located on northbound I-5 in northern Los Angeles County.⁷

The trucking industry, including common carrier, private carrier, contract carrier, drayage and owner-operator services, handles both line-haul and pick-up and delivery. The industry uses the public highway system for over-the-road and local service, however it is also served by a considerable infrastructure of its own. This infrastructure includes truck terminals, warehousing, consolidation and

⁷ Southern California Association of Governments. 2003. *Goods movement truck and rail study*. Los Angeles, CA.

trans-loading facilities, freight forwarders, truck stops and maintenance facilities. These various facilities are especially prevalent in the case in the South Bay and Gateway Cities areas, including Wilmington and Carson and extending generally between LAX and the San Pedro Bay Ports, along the I-710 Corridor north to Vernon, Commerce, and downtown Los Angeles, east through the San Gabriel Valley to Industry, Pomona, and Ontario and then to the Inland Empire in Fontana and Rialto as well as in Glendale, Burbank and Bakersfield. Specialized facilities for trucking that provide air cargo ground transport are located around regional airport facilities, notably LAX and Ontario. In 2000, approximately 1 million daily heavy-duty truck trips occurred in the SCAG region (3% of all vehicle trips). Approximately 16% of all heavy-duty truck travel occurs in delay.⁸

Maritime Ports

Southern California is served by three major deep-water marine ports. These ports—Hueneme, Long Beach and Los Angeles—accommodate 70 weekly vessel strings handling Asia – North America trade, and are served by the two major railroads and numerous trucking companies in Southern California. The Port of Hueneme, with its recent expansion, ranks as one of the premier automobile and agricultural product-handling facilities in California. The Ports of Long Beach and Los Angeles are full-service ports with facilities for containers, autos and various bulk cargoes. With an extensive landside transportation network, the three ports moved more than 187 million metric tons of cargo in 2002.⁹

In particular, the San Pedro Bay Ports (Long Beach and Los Angeles) dominate the container trade in the Americas by shipping and receiving more than 10.6 million Twenty-foot Equivalent Units (TEUs) of containers in 2002.¹⁰ Together these two ports rank third in the world, behind Rotterdam and Hong Kong, as the busiest maritime ports.

Non-Motorized Transportation Network

Biking and walking primarily constitutes non-motorized transportation. Non-motorized transportation plays a bigger role in the densely-populated, mixed-land-use areas of the region. In 2000 biking and walking accounted for approximately 8.3 percent of total trips and 4.4 percent of trips to work or university from home.¹¹

The region's bikeways encourage non-motorized travel, serve as recreational facility, and provide inexpensive, environmentally-friendly transportation opportunities. Class I bikeways are separate paths, Class II bikeways are striped lanes in streets, and Class III bikeways are signed routes. More than 1,000 miles of Class I and II bikeways exist through the region, as well as mountain bike trails,

⁸ Southern California Association of Governments 2003. *Year 2000 model validation summary of the regional transportation model*. Los Angeles, CA.

⁹ Port of Los Angeles and Port of Long Beach. 2003. Accessed from www.portoflosangeles.org/about/facts.htm and www.polb.com/html/2_portStats/comparison.html on August 6, 2003.

¹⁰ *Ibid.* Accessed on August 6, 2003.

¹¹ Southern California Association of Governments 2003. *Regional travel demand model results*. Los Angeles, CA.



some of which are also designated for hiking and horseback riding. Bike rack, locker and station programs are ongoing in a number of cities and transit operators. In addition, bus bike racks and bike-on-train programs are offered by a number of transit operators.

Pedestrian access at and near public transit, in most major commercial areas and many residential areas is facilitated by sidewalks, a number of pedestrian malls, and in some cases local jogging and pedestrian trails or paths.

Regional Aviation System

The SCAG region contains 56 public use airports, including six active commercial service airports, 44 general aviation, two active limited-commercial service (commuter) airports, two former military airfields (now public-use airports) and two joint-use facilities. The existing active commercial service airports (shown in Figure 3.3-4 in the Figure Chapter at the end of this document) handle the majority of passenger air traffic. They are:

- Bob Hope Airport
- Imperial County (limited commercial service)
- John Wayne/Orange County
- Long Beach
- Los Angeles International
- Ontario International
- Oxnard (limited commercial service)
- Palm Springs

In all, some 89 million annual passengers (MAP) were served in the region in 2000, more than double the number served in 1980. The level of air passenger demand is forecast to be approximately 170 MAP by 2030. While none of the individual airports is the largest in the U.S., the region's airports collectively are the busiest of any region in the country. The existing level of activity reflecting air passenger demand (MAP), operations (take-offs and landings or TOAL) and air cargo demand at each of the six existing airports is shown in Table 3.3-10. A brief discussion of the location, major access routes and facilities at each of these airports follows. In addition, the six other regional airports at which major improvements and/or conversion to civilian uses are contemplated are also described below.

Los Angeles International Airport

Los Angeles International Airport (LAX), as shown in Figure 3.3-4 in the Figure Chapter at the end of this document, is located in the southwestern portion of the City of Los Angeles, bordered by Arbor Vitae / Westchester Parkway to the north, Interstate 405 to the east, Interstate 105 / Imperial Highway to the south, and the Pacific Ocean to the west. It is surrounded by the communities of Westchester and Playa del Rey to the north; the City of El Segundo to the south; and the City of Inglewood and unincorporated areas of Los Angeles County (Lennox and Del Aire) to the east. Major access routes include Interstate 405 and Interstate 105 and a complex network of surface streets extending throughout the surrounding area, including Sepulveda Boulevard, Lincoln

Table 3.3-10: Existing (2002) Activity at Major Commercial Airports in the SCAG Region

	<i>Los Angeles</i>	<i>Ontario</i>	<i>John Wayne</i>	<i>Bob Hope</i>	<i>Long Beach</i>	<i>Palm Springs</i>	<i>Regional Total</i>
Air Passenger Volume (,000)	56,200	6,512	7,903	4,261	1,453	1,108	77,800
Percent of Regional Total	72%	8%	10%	6%	2%	1%	99%
Air Cargo Volume (tons)	1,958,654	547,460	15,152	43,093	58,607	82	2,623,044
Percent of Regional Total	75%	21%	<1%	2%	2%	<1%	100%
Total Annual Operations	645,424	149,292	368,627	162,284	324,345	104,455	1,844,427
Average Daily Operations	1,768	409	1,010	445	889	206	10,106
Percent of Regional Total	35%	8%	20%	9%	18%	6%	100%

Source: Collected from various airports (2003). SCAG. Los Angeles, CA.

Boulevard, La Cienega Boulevard, Aviation Boulevard, Century Boulevard, Arbor Vitae / Westchester Parkway and Imperial Highway.

Ontario International Airport

Ontario International Airport (ONT) is located in the southwest section of San Bernardino county within the city of Ontario, approximately two miles east of Ontario's Central Business District between Holt and Mission Boulevards, and between Haven and Grove Avenues, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include Interstate 10 and State Route 60 and the major surface streets in the surrounding area, including Holt Boulevard, Archibald and Vineyard Avenues.

John Wayne Airport

John Wayne Airport (SNA) is located in the western portion of Orange County, directly south of Interstate 405, one mile east of State Route 55, and one mile north of State Route 73, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including MacArthur Boulevard and Michelson Drive. The majority of the land surrounding the Airport is within the Cities of Newport Beach, Costa Mesa, and Irvine. In addition, the unincorporated community of Santa Ana Heights is located southeast of the Airport.

Bob Hope Airport

Bob Hope Airport (BUR) is located in the western portion of Los Angeles County, on the west side of the City of Burbank, one mile south of Interstate 5, three miles east of State Route 170, and three miles north of State Route 134, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including Hollywood Way and San Fernando Road.



Long Beach Airport

Long Beach Airport (LGB) is located in the southern portion of Los Angeles County, in the center of the City of Long Beach, directly north of Interstate 405, and three miles west of Interstate 605, and three miles east of Interstate 710, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these freeways and the major surface streets in the surrounding area, including Lakewood Boulevard (State Route 19).

Palm Springs International Airport

Palm Springs International Airport (PSP) is located in the central portion of Riverside County, in the City of Palm Springs, two miles southwest of Interstate 10 and one mile northeast of Gene Autry Trail (State Route 111), as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Ramon Road.

Palmdale Regional Airport

Palmdale Regional Airport (PMD) is located in northern Los Angeles County, within the north central portion of the City of Palmdale in United States Air Force Plant 42 (AFP 42), one mile north of State Route 138, and three miles east of State Route 14, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including 20th Street and Avenue P.

San Bernardino International Airport

San Bernardino Airport (SBD), formerly Norton Air Force Base, is within the City of San Bernardino and is surrounded by unincorporated areas of San Bernardino County and the cities of Redlands, Loma Linda, Highland, and Colton. The Airport is approximately three miles east of Interstate 215, two miles north of Interstate 10, and one mile west and two miles south of State Route 30, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Tippecanoe Avenue, Mill Street and 3rd Street.

Southern California Logistics Airport

Southern California Logistics Airport (VCV), formerly George Air Force Base, is within the City of Victorville, surrounded by unincorporated areas of San Bernardino County and the cities of Victorville and Adelanto. It is approximately two miles east of State Route 395, and three miles northwest of Interstate 15, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. Major access routes include these highways and the major surface streets in the surrounding area, including Adelanto Road and Air Base Road.

March Air Reserve Base/March Inland Port

March Air Reserve Base / March Inland Port (RIV), formerly March Air Force Base, is located in the western portion of Riverside County east of and adjacent to Interstate 215 and two miles south of State Route 60, as shown in Figure 3.3-4 in the Figure Chapter at the end of this document. The joint-use facility is bordered by the cities of Moreno Valley to the north and east, Riverside to the

northwest, and Perris to the south. Major access routes include these freeways and the major surface streets in the surrounding area, including Van Buren Boulevard and Perris Boulevard.

REGULATORY SETTING

This section describes the federal and state legal framework within which the Regional Transportation Plan (RTP) is developed. It also provides a description of the role various governmental institutions play in shaping and using the Plan.

Federal Agencies and Regulations

Under the Transportation Efficiency Act for the 21st Century (TEA-21), the U.S. Department of Transportation (USDOT) requires that the Metropolitan Planning Organizations (MPOs) prepare long range transportation plans. In federally designated non-attainment and maintenance areas, these plans must be updated every three years. SCAG adopted the 2001 RTP in April 2001, and amended it in March 2002. The 2004 RTP is an update to the 2001 RTP and it replaces the 2001 RTP in its entirety.

The Federal requirements for metropolitan regional transportation plans include the following key provisions:

- Plans must be developed through an open and inclusive process that ensures public input and seeks out and considers the needs of those traditionally under served by existing transportation systems.
- Plans must be for a period not less than 20 years into the future.
- Plans must reflect most recent assumptions for population, travel, land use, congestion, employment, and economic activity.
- Plans must be financially constrained and revenue assumptions must be reasonable in that they can be expected to be available during the time frame of the plan.
- Plans must conform to the applicable State Implementation Plans (SIPs).
- Plans must consider seven planning factors and strategies, in the local context, as follows:
 1. Support the economic vitality of the United States, the individual states, and metropolitan areas, especially by enabling global competitiveness, productivity and efficiency;
 2. Increase the safety and security of the transportation system for motorized and non-motorized users;
 3. Increase the accessibility and mobility options available to people and for freight;

4. Protect and enhance the environment, promote energy conservation, and improve quality of life;
5. Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
6. Promote efficient system management and operation; and
7. Emphasize the preservation of the existing transportation system.

State Agencies and Regulations

The State requirements largely mirror the Federal requirements and the State has adopted extensive Regional Transportation Plan guidelines. Key additional requirements of the State include the following:

- Transportation plans must comply with the California Environmental Quality Act (CEQA);
- The first four years of the plan must be consistent with the four-year State Transportation Improvement Program (STIP) as incorporated into the Regional Transportation Improvement Program (RTIP);
- Program level performance measures that include objective criteria that reflect the goals and objectives of the RTP must be utilized in the development and evaluation of the Plan;
- Finally, the State guidelines also call for three specific elements of regional plans - a policy element, an action element, and a financial element.

METHODOLOGY

This section summarizes the methodology used to evaluate the expected impacts of implementation of the proposed Plan on transportation and associated environmental effects.

The methodology used in this analysis evaluates the Plan from a system-wide perspective at both the county and regional levels using SCAG's Regional Travel Demand Model. SCAG's Regional Travel Demand Model is a sophisticated chain of models that supports the development of the Regional Transportation Plan (RTP), the Regional Transportation Improvement Program (RTIP) and used as input for development of Air Quality Management Plans in the SCAG region, i.e. the South Coast Air Quality Management Plan (AQMP). The model is a tool for comparisons among alternative transportation system configurations and associated population and employment trip distributions. It should be noted that occurrences that are common but unpredictable such as accidents, transit strikes, and other erratic variables are not included as inputs to the transportation model. Additionally, the model has a margin of error of approximately 5-15%.

Key model inputs to this SCAG model include socio-economic characteristics by traffic analysis zone and detailed descriptions of the existing and proposed transportation networks. Both the socio-economic characteristics and the transportation networks are assumed to change over time, with

future conditions including projected land use development and anticipated transportation improvements. The SCAG model covers all urbanized areas in the five-county area (Los Angeles, Orange, Riverside, San Bernardino and Ventura counties). Data for Imperial County was obtained from a separate model prepared for that County.

Comparison with the No Project

The analysis of transportation resources includes a comparison between the expected future conditions with the 2004 RTP and the expected future conditions if no plan was adopted. This evaluation is not included in the determination of the significance of impacts, however, it provides a meaningful perspective on the effects and benefits of the 2004 RTP.

Determination of Significance

The significance of impacts was determined by applying the significance criteria below to compare current regional transportation conditions to expected future conditions with the Plan. The Regional Travel Demand Model, discussed above, provides performance data for future Plan conditions, and the performance measure output for year 2030 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2030 transportation model output provides a regional and cumulative level of analysis for the impacts of the 2004 RTP on transportation resources.

SIGNIFICANCE CRITERIA

A significant impact is defined as “a substantial or potentially substantial, adverse change in the environment” (Public Record Code § 21068). The proposed Plan would have a significant impact if implementation would potentially:

- Generate substantially more total daily Vehicle Miles of Travel (VMT) than the current daily VMT;
- Result in a substantially higher average Vehicle Hours Traveled (VHT) in delay and percent total VHT in delay for all trips compared to the current VHT delay;
- Result in substantially greater average delay and percent of total VHT in delay for heavy-duty truck trips than the current condition;
- Result in substantial decrease in the percent of work opportunities within 45 minutes travel time by personal vehicle or by transit, relative to the existing condition;
- Result in a substantially higher system-wide fatality accident rate for all travel modes compared to the existing condition; or
- Result in a substantially higher system-wide injury accident rate for all travel modes compared to the existing condition.

- Cause a cumulatively considerable adverse effect on regional transportation and associated environmental effects.

IMPACTS AND MITIGATION MEASURES

Implementation of the 2004 RTP would include implementation of a series of projects which are described in the Project Description (Section 2.0). As discussed in the Methodology and Significance Criteria above, the 2030 transportation system performance is compared to the performance of the existing system for the purpose of determining the significance of impacts. The existing system is represented by year 2000 data as this is the best and most recent data available for regional transportation modeling purposes.

Compared to the existing condition, in 2030 with the implementation of the 2004 RTP, Vehicle Miles Traveled, and Vehicle Hours in delay for all vehicles and for heavy-duty trucks would increase. The percent of work opportunities within 45 minutes travel time by auto or transit would increase. Fatality and injury accident rates would improve.

All mitigation measures shall be included in project-level analysis as appropriate. The lead agency for each individual project in the Plan shall be responsible for ensuring adherence to the mitigation measures prior to construction. SCAG shall be provided with documentation of compliance with mitigation measures through SCAG's monitoring efforts, including SCAG's Intergovernmental Review Process.

Impact 3.3-1: In 2030 there would be substantially more total daily Vehicle Miles of Travel (VMT) than the current daily VMT. Implementation of the 2004 RTP would contribute to this increase.

Substantial growth and development is anticipated to occur within the region between 2000 and 2030. Based on SCAG's model results, average daily VMT are expected to grow from 369 million miles in 2000 to 482 million miles per day in 2030. This change constitutes a 31% increase over this period and includes light, medium and heavy duty vehicle VMT in all six counties.¹² Though per capita VMT would decrease, the environment would experience an overall increase in VMT. The increase in VMT would be a significant impact.

The relationship between the VMT in 2030 with implementation of the 2004 RTP and without implementation of the RTP (The No Project alternative) are shown in Table 3.3-11. Implementation of the 2004 RTP would reduce vehicle miles of travel in 2030 from 500 million miles (without implementation of the 2004 RTP) to 482 million miles.¹³ However, for the purpose of determining the significance of this impact, conditions with the Plan must be compared to the existing setting.

¹² Southern California Association of Governments 2003. *Draft 2004 regional travel demand model Results*. Los Angeles, CA.

¹³ *Ibid.*



Table 3.3-11: Daily Vehicle Miles Traveled (VMT) in 2000 and 2030 (in millions)

<i>2000 Base Year</i>	<i>2030 No Project</i>	<i>2030 Plan</i>
368.5	500.3	482.3
Source: SCAG. (2003). <i>Regional Travel Demand Model Results</i> . Los Angeles, CA.		

Mitigation Measures

Measures intended to reduce vehicle miles traveled are part of the 2004 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use-transportation connection and other Travel Demand Management measures (as described in the Project Description in Section 2.0).

MM 3.3-1a: Beyond the currently financially and institutionally feasible measures included in the 2004 RTP, SCAG shall identify further reduction in VMT could be obtained through additional car-sharing programs, additional vanpools, additional bicycle programs, and implementation of a universal employee transit pass program.

Significance After Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2004 RTP would be expected to reduce VMT, however even with this mitigation, the 2030 VMT would be substantially greater than the existing VMT. Therefore, the increase in VMT would remain a **significant impact**.

Impact 3.3-2: In 2030 there would be substantially higher average delay than the current condition. Implementation of the 2004 RTP would contribute to this increase.

As detailed in Table 3.3-12, total daily delay is expected to grow from 2.2 million person-hours in 2000 to 3.2 million person-hours in 2030. This constitutes a 45% increase from conditions in 2000 and includes light, medium and heavy delay in all six counties.¹⁴ The increase in daily delay would be a significant impact.

The relationship between the delay in 2030 with implementation of the 2004 RTP and without implementation of the RTP (The No Project alternative) are shown in Table 3.3-12. Implementation of the 2004 RTP would reduce daily delay in 2030 from 5.4 million person-hours (without

¹⁴ Southern California Association of Governments 2003. *Regional travel demand model results*. Los Angeles, CA.

implementation of the 2004 RTP) to 3.2 million person-hours.¹⁵ However, for the purpose of determining the significance of this impact, conditions with the Plan must be compared to the existing setting.

Mitigation Measures

Measures intended to reduce delay are part of the 2004 RTP. These include: system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce delay (as described in the Project Description in Section 2.0). Further reduction in delay would be obtained through the measures described for **Impact 3.3-1**.

Significance After Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2004 RTP would be expected to reduce delay for all vehicles, however even with this mitigation, the 2030 total delay would be substantially greater than the existing delay. Therefore, the increase in total delay would remain a **significant impact**.

Table 3.3-12: Daily Hours of Delay in 2000 and 2030 (in millions)			
<i>All Vehicles and Trucks</i>			
	<i>2000 Base Year</i>	<i>2030 No Project</i>	<i>2030 Plan</i>
Delay (person-hours)	2.2	5.4	3.2
<i>Heavy Duty Trucks</i>			
	<i>2000 Base Year</i>	<i>2030 No Project</i>	<i>2030 Plan</i>
Delay (vehicle-hours)	0.089	0.240	0.161
Source: SCAG. (2003). Regional Travel Demand Model. Draft 2004 Regional Transportation Plan. Los Angeles, CA.			

Impact 3.3-3: In 2030 there would be substantially greater average delay for heavy-duty truck trips than the current condition. Implementation of the 2004 RTP would contribute to this increase.

As detailed in Table 3.3-12, total daily heavy-duty truck delay is expected to increase from 89,000 average daily heavy-duty truck vehicle hours of delay in 2000 to 161,000 hours in 2030. This

¹⁵ *Ibid.*

constitutes a 79% increase from conditions in 2000.¹⁶ The increase in daily heavy-duty truck trip delay would be a significant impact.

For the region and each county, the relationship between the daily heavy-duty truck trip daily delay with implementation of the 2004 RTP and without implementation of the RTP (The No Project alternative) are shown in Table 3.3-12. Implementation of the 2004 RTP would reduce daily heavy-duty truck hours of delay in 2030 from 240,000 hours (without implementation of the 2004 RTP) to 161,000 hours.¹⁷ However, for the purpose of determining the significance of this impact as required by CEQA, conditions with the Plan must be compared to the existing setting.

Mitigation Measures

Mitigation measures intended to reduce daily heavy-duty truck vehicle hours of delay are part of the 2004 RTP. These include: goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay (as described in the Project Description in Section 2.0). Further reduction in delay for *all* vehicles would be obtained through the implementation of the measures described for **Impact 3.3-1**. The following mitigation measure could decrease delay for heavy-duty trucks.

MM 3.3-3a: The region's ports should extend operation hours in order to reduce heavy-duty truck traffic during peak periods, thereby reducing the VHT these trucks spend in delay.

Significance After Mitigation

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2004 RTP would be expected to reduce delay for heavy trucks, however even with this mitigation, the 2030 heavy-duty truck delay would be substantially greater than the existing delay. Therefore, the increase in heavy-duty delay would remain a **significant impact**.

Impact 3.3-4: Implementation of the 2004 RTP would contribute to an increase in the percent of work opportunities within 45 minutes travel time by personal vehicle or by transit in 2030, relative to the existing condition.

In 2000, approximately 88% of the evening work trips take 45 minutes or less by auto and 33% occur within 45 minutes by transit. In 2030, with the implementation of the Plan, 90% of evening work trips by auto would be 45 minutes or less and 34% of transit trips would occur within 45 minutes.¹⁸

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ *Ibid.*



Evening work trips are used for this measure as this is the portion of the day prone to the most delay. 45 minutes is used as a benchmark to account for reasonable commute lengths for both the auto and transit modes.

For the region and each county, the relationship between the percent of work opportunities within 45 minutes travel time with implementation of the 2004 RTP and without implementation of the RTP (The No Project alternative) are shown in Table 3.3-13. Implementation of the 2004 RTP would increase the percent of work opportunities within 45 minutes evening travel time by auto in 2030 from 83% (without implementation of the 2004 RTP) to 90% (with the Plan) in 2030. The percent of work opportunities within 45 minutes evening travel time by transit in 2030 would increase from 29% (without the Plan) to 34% (with the Plan).¹⁹

Table 3.3-13: Percentage of Evening Work Trips Completed Within 45 Minutes			
	<i>2000 Base Year</i>	<i>2030 No Project</i>	<i>2030 Plan</i>
<i>Auto</i>	88%	83%	90%
<i>Transit</i>	33%	29%	34%
Source: SCAG. (2003). <i>Regional Travel Demand Model Results</i> . Los Angeles, CA.			

Mitigation Measures

The impact would be beneficial. No mitigation measures are required.

Significance After Mitigation

The increase, between 2000 and 2030, in the percent of work trips accessible within 45 minutes travel time by auto or transit would be a **beneficial impact**.

Impact 3.3-5: Implementation of the 2004 RTP would contribute to a lower system-wide fatality accident rate for all travel modes in 2030 compared to the existing condition.

The system-wide daily fatality rate would be 0.27 fatalities per million persons for all travel modes, .01 less than the existing rate of 0.28 (Table 3.3-14). The impact would be beneficial. The 2004 RTP includes Transportation System Management strategies that improve safety through reducing the concentration of weaving and merging, and that clear existing incidents and accidents more quickly, among other measures.

¹⁹ *Ibid.*

Mitigation Measures

The impact would be beneficial. No mitigation measures are required.

Significance After Mitigation

The decrease, between 2000 and 2030, of the system-wide fatality accident rate would be a **beneficial impact**.

Impact 3.3-6: Implementation of the 2004 RTP would contribute to a lower system-wide injury accident rate for all travel modes in 2030 compared to the existing condition.

Table 3.3-14: 2000 and 2030 SCAG Regional Transportation System Accident Rates			
(Daily per million persons)	2000 Base Year	2030 No Project	2030 Plan
Fatalities	0.28	0.28	0.27
Injuries	10.9	10.9	10.6
Sources: California Department of Transportation, Division of Transportation System Information. (November 2002). California Motor Vehicle Stock, Travel and Fuel Forecast, Appendix B. Federal Transit Administration. (2002). National Transit Database, 2001. Accessed from www.ntdprogram.com in April 2003. SCAG. (2003). Regional Travel Demand Model.			

The system-wide daily injury rate would be 10.6 injuries per million persons for all travel modes, a decrease of 0.4 daily injuries per million persons when compared to the existing rate of 11.0 (Table 3.3-14). The 2004 RTP includes Transportation System Management strategies that improve safety through reducing the concentration of weaving and merging, and that clear existing incidents and accidents more quickly, among other measures.

Mitigation Measures

The impact is beneficial. No mitigation measures are required.

Significance After Mitigation

The decrease, between 2000 and 2030, of the system-wide injury rate is a **beneficial impact**.

Cumulative Impacts

A cumulative impact consists of an impact which is created as a result of the combination of the 2004 RTP together with other projects causing related impacts.



The 2030 transportation model includes the population, households, and employment projected for 2030, and therefore the largest demand on the transportation system expected during the lifetime of the 2004 RTP. In accounting for the effects of regional population growth, the model output provides a regional, long-term and cumulative level of analysis for the impacts of the 2004 RTP on transportation resources. **Forecast urban development and growth that would be accommodated by the transportation investments in the 2004 RTP, together with the increased mobility provided by the 2004 RTP would contribute to the significant impacts described in Impacts 3.3-1, 3.3-2, and 3.3-3 above.** The regional growth, and thus cumulative impacts, are captured in the VMT, VHT, and heavy-duty truck VHT data reported for the above impacts.

In addition to the impacts described above, the urban development and growth that would be accommodated by the transportation investments in the 2004 RTP would have the following additional cumulatively considerable impact:

Cumulative Impact 3.3-7: Implementation of the 2004 RTP would contribute to a cumulatively considerable amount of transportation impacts, such as VMT and all-vehicle VHT in delay, to counties outside of the SCAG region. As the population increases through 2030, the number of trips originating and ending in Santa Barbara, San Diego and Kern counties to and from the SCAG region would increase. The transportation demand from growth, in combination with the projects in the 2004 RTP would contribute to a cumulatively considerable transportation impact in these other counties.

The projects and measures designed to minimize VHT and VMT that are included in the 2004 RTP , and Mitigation Measures 3.3-1-a through 3.3-3a would minimize this effect. However, the regional contribution would remain **significant**.

Comparison with the No Project

Comparison with the No Project is included in the discussion of each impact (3.3-1 through 3.3-6 above). The transportation impacts of the 2004 RTP would be less than those of the No Project Alternative.



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